RPC Key Differences

In order to keep some data in transactions confidential, SUAVE JSON-RPC extends the usual Ethereum JSOPN-RPC methods. Some methods in the eth_ namespace are overloaded to support confidential compute requests.

1. **eth_sendRawTransaction**

Creates a new message call transaction or a contract creation for any signed ConfidentialComputeRequest.

1. **eth_call**

Executes a new message call immediately without creating a transaction on the block chain. It follows the same format as the default eth_call with two extra parameters:

- IsConfidential: Set to true to execute as a confidential request and access the MEVM methods.

- ExecutionAddress: address - (optional) The execution address that performs the execution.

- **eth_kettleAddress**

Returns the list of available addresses in the Kettle to execute the confidential compute request.

Testing the RPC

The easiest way to test your connection to an RPC endpoint is via a simple curl command.

Remote curl request

bash curl -X POST \ -H "Content-Type: application/json" \ --data '{"jsonrpc":"2.0","method":"eth_kettleAddress","params":[],"id":1}' \ https://rpc.rigil.suave.flashbots.net

Local curl request

```bash curl -X POST \ -H "Content-Type: application/json" \ --data '{"jsonrpc":"2.0","method":"eth_kettleAddress","params":[],"id":1}' \ http://localhost:8545
```

Expected Response

If your connection is working properly you should get a response such as:

JSON {"jsonrpc":"2.0","result":"0x30870","id":1}

Note that the only difference between these two is the URL at the end of the curl request.

SUAVE Transactions

The example above follows the exact same API interface as the original go-ethereum client. However, if we grab a random transaction hash from the Rigil Explorer, we can see the core difference with the SUAVE Rigil RPC: a new SUAVE transaction type.

Remote curl request

bash curl -X POST -H "Content-Type: application/json" \ --data '{ "jsonrpc": "2.0", "method": "eth_getTransactionByHash", "params": ["0x294b510e4fd257dec3d27b051f157489446c38828ff5f6b8d8c194797c6ddaab"], "id": 1 }' \ https://rpc.rigil.suave.flashbots.net

Response

JSON { "jsonrpc": "2.0", "result": { "blockHash": "0x165444c40f3f963c91c0b8f30d40d2946c4264cb889e8254cf6668319d662fa9", "blockNumber": "0xb0d61", "chainId": "0x1008c45", "confidentialComputeResult": "0xee2cc364000000000000000000000000000000000000000000000000000000006039d118e4d92d41988043f41a0ae2412d5891812600c63b0dfba4cd7954e94b796e22ce51ae18ed57501f9df3a9f9cd6b1001239e5ff9033b051c2d79fda8decf0 "from": "0xdacc37d00411381083d36864b9bfb06bc31a7aec", "gas": "0x989680", "gasPrice": "0x3b9aca00", "hash": "0x294b510e4fd257dec3d27b051f157489446c38828ff5f6b8d8c194797c6ddaab", "input": "0xee2cc364000000000000000000000000000000000000000000000000000000006039d118e4d92d41988043f41a0ae2412d5891812600c63b0dfba4cd7954e94b796e22ce51ae18ed57501f9df3a9f9cd6b1001239e5ff9033b051c2d79fda8decf0 "nonce": "0x5", "r": "0xc9d97182f9cb70986e4096be9fb299a120f714aaf15897e1cd5c08a7281ac86f", "requestRecord": { ... }, "s": "0x765917eb8554a00d43162f9b9fff8646e8a7ce1756855d84f7627ec9571689d1", "to": "0xa60f1b5cb70c0523a086bbcbe132c8679085ea0e", "transactionIndex": "0x0", "type": "0x50", "v": "0x1", "value": "0x0" }, "id": 1 }

This response has a couple fields that aren't in your traditional Ethereum transaction type, namely:

- confidentialComputeResult
- executionNode
- requestRecord

To dive deeper into these differences checkout the SUAVE chain specs.